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On Books

An American Classic: A Review of *B. F. Skinner: A Life* by D. W. Bjork

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To evade the bondage of system and habit, of family maxims, class opinions, and, in some degree, of national prejudices; to accept tradition only as a means of information, and existing facts only as a lesson to be used in doing otherwise and doing better; to seek the reason of things for oneself, and in oneself alone; to tend to results without being bound to means, and to strike through the form to the substance—such are the principal characteristics of what I shall call the philosophical methods of the Americans. (Tocqueville, 1840/1945, p. 3)

In accounting for human behavior, B. F. Skinner typically referred to three kinds of contingencies: contingencies of natural selection, contingencies of reinforcement, and contingencies of culture. The first is the evolutionary process that resulted in a human species with certain behavioral and physiological characteristics, including the susceptibility to reinforcement. The second refers to the particular reinforcement contingencies that determine the behavior of a given individual. The third refers to the web of reinforcement relations that shapes the interactions of a given set of individuals and determines that group's social structure, or culture.

Whereas one might typically think of a biography, particularly of a behaviorist, as consisting principally of a description in terms of the first two categories—what reinforces the person and what behaviors have been shaped—Bjork's biography has instead focused on the third. B. F. Skinner is analyzed in terms of American cultural trends and patterns. As Bjork states in his preface.

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While attempting to present an even-handed appraisal of his life and work, I have kept the central focus on the relationship between Skinner and the American tradition. . . . Whether or not he offered a world of promise or fright, he was an American original, adding a fresh twist to the American scientific, intellectual and social heritage. (pp. xii–xiii)

Bjork acquits himself well in meeting the above objectives. He is a professional historian with an established reputation as a biographer; Bjork knows his craft and applies it well. The book is well organized, clearly written, and skillfully and exhaustively referenced. There are over 800 chapter notes in the book. Bjork also had the opportunity to interview Skinner at length before his death, and Skinner was remarkably forthcoming in his remarks. Bjork (and his wife) also interviewed Skinner's wife, Eve; their daughters, Julie Vargas and Deborah Buzon; and many of Skinner's colleagues and friends, including Fred Keller and Richard Herrnstein. Their personal insights add considerable depth and color to the biographer's depiction of Skinner as husband and father, scientist and academician. In addition to these conventional sources of information, Bjork is the first biographer who has had complete access to the large collection of unpublished notes and personal correspondence that Skinner accumulated over the years, and he has mined this resource well. Many of the book's points are illuminated by Skinner's carefully prepared but unpublished notes.

The quality of Bjork's research and writing notwithstanding, it is the particular cultural perspective on Skinner that makes the biography of especial interest. In a 1987 interview on WGBH-TV, Boston, Skinner was described by the show's

host as a 20th century Benjamin Franklin, "the peculiarly American pragmatic, optimistic gadgeteer of the Enlightenment." Although Skinner didn't disagree completely with the comparison, he said he tended to identify more with the figures of the French Enlightenment, as he had commented before (1983, p. 406). However, whether one emphasizes the mechanical inventiveness of Franklin or the literary skills of the encyclopedist Diderot, they share with Skinner the Baconian goal of rethinking and restructuring their societies from a scientific perspective (see, e.g., Smith, 1986).

It is Bjork's effort to place Skinner in the stream of traditional American intellectual and social inheritance that largely determines the structure of the biography. In the first two chapters, "Inventive Beginnings" and "Between Two Lives," Skinner's boyhood in Susquehanna, Pennsylvania, and his life as a young man at Hamilton College are described both in terms of Skinner's particular experiences and as a depiction of the first quarter of the 20th century in small-town America. Bjork sets some of the major themes of his analysis during these chapters. Social betterment, the Protestant work ethic, and an abiding concern for "what people will think" are the values that are transmitted to Skinner through his family, teachers, and friends, while Skinner's aptitude for inventively coping with disarray, both physical and intellectual, both fit and clash with these imbedded social values.

Chapter 3, "A Hill of Dreams," describes Skinner's "dark year" (actually 2 years) in Scranton, Pennsylvania, where his family had moved while Skinner was in college, as he attempted and failed to establish himself as a writer. The chapter depicts young Skinner's struggle to become an "objective writer," while continuing to participate in (but sarcastically commenting on) the social and literary trends of the time. The conflict is ended, if not resolved, by Skinner's application and acceptance to Harvard University to pursue a graduate education in psychology.

There is considerable speculation about the variables that effected Skinner's switch from writing to psychology (see, e.g., Coleman, 1985), and Bjork's perspective on this issue is greatly enhanced by his access to Skinner's letters to Percy Saunders during that time. Saunders was a Hamilton College dean and chemistry professor who Skinner greatly admired. He had tutored Saunders's youngest son while at Hamilton and became greatly impressed with the Saunders family and their style of life. Skinner's correspondence with Saunders was remarkably candid regarding the issues confronting him at that time, both in personal terms and in terms of his effort to acquire a literary perspective. (Hamilton College has made these letters available only recently; Skinner was apparently unaware of their existence while working on his autobiography.)

Chapters 4 and 5, "The Birth of a New Science" and "Behaviorist at Large," focus principally on Skinner's years at Harvard and his development of operant conditioning theory. Skinner's own account of this period has been told in several places, most thoroughly in the second volume of his autobiography (Skinner, 1979), but Bjork also gives us the views of Skinner's teachers and colleagues. He clarifies the intellectual, academic, and political climate of that era at Harvard, and shows again how Skinner's strategy of coping by mechanical invention and intellectual reconstruction, along with his ambition and near-contempt for traditional thinking, are all brought forth by this new environment. Skinner's fabrication of both the lever-press chamber and the cumulative recorder and his theorizing regarding the implications of his experimental observations, as well as his firm conviction that no better account than his own was worth considering, reveal all these characteristics. Bjork portrays Skinner's professional image during this period as "A double-exposed picture. . . . His colleagues and contemporaries saw him as a brilliant and determined contributor to important scientific research; but they

also found him argumentative, fanatical, and intolerant of other approaches" (p. 113).

When Skinner finally published his research and theories in *The Behavior of Organisms* (1938), the book received a rather negative response from the professional community due principally to its polemical nature. Few of his colleagues grasped its revolutionary scientific implications at the time; Skinner's descriptive behaviorism was contrary to, not a variant of, the learning theory movement of that era (see, e.g., Verplanck, 1954). Keller, of course, was a notable exception; he immediately began to restructure both his teaching and his research in accordance with Skinner's operant conditioning principles.

Skinner's personal struggles with family bonds and sexual pursuits continue to play a significant part in the biography, but their implications for Skinner's scientific pursuits seem negligible by this point in his life. To some extent, much of the apparent personal turbulence ended with his marriage to Yvonne (later Eve) Blue, but there is contradictory evidence to that as well. However, even before he enrolled at Harvard, Skinner had acquired the ability to compartmentalize and isolate his intellectual efforts, Bjork would argue almost literally, from his other activities. Bjork portrays this division almost quantitatively. Even though some of the more striking pictures of Skinner are those involving personal rather than professional or scientific matters (such as branding his arm with the initial of an ex-lover), the page allotment addressing Skinner's personal life after Chapter 3 becomes minimal compared with the space devoted to Skinner's scientific and cultural activities.

Chapter 5 ends in 1940 with Skinner at the University of Minnesota and the story of Project Pigeon, Skinner's effort to shape pigeons to guide combat missiles. This experience was the practical impetus for Skinner's enduring conviction that operant conditioning offered a powerful means to accomplish social ends. It was also another opportunity for Skinner to argue against conventionality, in this case the military establishment, and lose. Skinner's struggle to find acceptance and implementation of his project by the National Defense Research Council is carefully detailed and, although Skinner's account has long been available (Skinner, 1960), Bjork's supplementary information regarding our country's national defense policies and practices of that period adds considerably to the story. Bjork seems unfamiliar, however, with the extent to which this project did lay the groundwork for subsequent development of animal behavior technology for both commercial and military purposes.

The remaining chapters are each devoted to Skinner as a social engineer, and from this point forward the focus of the book shifts almost entirely from Skinner's personal and academic life to the relations among his behavioral philosophy and technology with America's social practices. Chapter 6, "The Social Inventor Emerges," is devoted almost entirely to Skinner's invention of and attempts to market the baby-tender, as he first called it—the enclosed climate-controlled crib he built for his second daughter Deborah. Bjork outlines the personal and social forces that led Skinner to his first real foray into human behavioral engineering, including Eve's dissatisfaction with the daily routines of early child care. As with Project Pigeon, the Aircrib, as it later came to be called, was never fully realized in terms of its social adoption, although Skinner made every effort to commercialize it. Bjork outlines in detail Skinner's attempts to bring the device to the public, which included writing an article for *Ladies' Home Journal* (Skinner, 1945) and several unsuccessful efforts to find a satisfactory manufacturer. Again, although Skinner's version of this episode is available, Bjork's ability to identify the various social forces at work in the postwar era, including the influence of Dr. Benjamin Spock and manufacturing trends during that period, help to clarify the resistance that Skinner met in gaining acceptance for the baby-tender.

As at other times during his career, Skinner's ability to invent a better way of doing things, now focused by his deliberate application of operant conditioning principles, is countered by his failure to overcome more conventional values and practices. In Bjork's account, a certain amount of Skinner's apparent lack of success in these matters is traceable to his seeming unawareness of many of the factors governing the existing social practices, particularly those of large organizational settings. Skinner's youthful disdain for the business world of his father, coupled with the literary emphasis of his college years, kept him largely ignorant of the forces of the marketplace, and he typically did not fare well when confronting them.

Chapter 6 ends in a brief description of what to many behavior analysts may have been Skinner's more interesting activities during that period, including his move in 1945 to Bloomington, Indiana, with his appointment as Chairman of the Psychology Department at the University of Indiana, and ending with his return to Harvard in 1948. That period was one of greatly expanded interest in basic operant research, both at Indiana and elsewhere, which eventually led to the establishment of the Conference on the Experimental Analysis of Behavior in 1947. That group met for several years and served as the nucleus for the subsequent professionalization of the field of behavior analysis, in terms of both publications and organizations. This period also was characterized by Skinner's return to his analysis of verbal behavior, subsequently presented in class at Columbia and in lectures at Harvard. Bjork notes these events, but does not explore them in any depth.

Chapter 7, "A Design for Living," is directed toward Skinner's *Walden Two* (1948), how he came to write it, how it was published, and how it was received by the critics and the public. In the book, Skinner challenges the entire American way of life, albeit fictionally, but in no uncertain terms. It is not just mother–child relations that are at issue (as with the baby-tender); it is all the values and daily practices of everyday living that Skinner seeks to change and improve with his science of behavioral control. Bjork's account reflects an excellent grasp of the book's philosophy of behaviorism as espoused by Frazier, and clearly articulates the issues that so enraged the book's severest critics, such as Joseph Wood Krutch. In addition, he traces the efforts in Boston and elsewhere to establish communities based on Walden Two and Skinner's varying degrees of participation in their development.

Chapter 8, "Educational Engineering," focuses on Skinner's design of the teaching machine and programmed instruction. Once again, Skinner had invented a mechanical device whose behavioral features were intended to improve an important social responsibility; in this case, education. As with Project Pigeon and the baby-tender, Skinner's behavioral technology succeeded both conceptually and in limited application, but failed to achieve social acceptance and wide-scale utilization. Bjork reveals a clear understanding of both the theory and the mechanics of the teaching machine and describes in detail Skinner's attempts to promote its manufacture and implementation by the educational system. Skinner's lack of success at the time was the result of several factors, not the least of which was his inability to gain the cooperation of James Conant, the President of Harvard at that time and a nationally prominent educator. It is clear from Bjork's research that neither Conant nor Skinner had the faintest understanding of the other, either personally or intellectually.

Chapter 9, "Beyond the American Tradition," may alone be worth the price of the book. Bjork describes the factors leading up to the publication of Skinner's 1971 best-seller, *Beyond Freedom and Dignity,* the national prominence Skinner achieved with its publication, and why. In this chapter, Bjork best realizes his stated goal for the biography, the proper positioning of B. F. Skinner in the American intellectual tradition. He argues, and persuasively, how Skinner's own behavioral patterns of innovation,

resistance to convention and authority, and optimistic efforts to better both himself and society eventually brought him to a position of directly challenging most of the mainspring beliefs of the cultural forces that produced his own behavioral repertoire. Skinner, of course, always interpreted his social engineering efforts simply as the natural extension of the science and philosophy of radical behaviorism. Bjork, while fully acknowledging the validity of Skinner's perspective and articulating it very well, goes on to explicate the Western philosophical and social forces that Skinner's efforts engage and provoke. It is quite one thing to behaviorally interpret the meaning of "freedom" as a social response to aversive control that is now conceptually outdated, as Skinner does. Bjork reminds us, however, that our nation fought a revolution, a civil war, and two world wars over just that concept—it will not readily relinquish the traditional meaning of the term.

The final chapter, "Master of Self-Management," portrays the final years of Skinner's life and describes his ever-inventive efforts to cope with his declining strengths. It was the capstone effort of over 70 years of practice, and allowed him to remain productive until the very end. Those who had the opportunity to see and hear Skinner's address at the 1990 APA convention—when he was 86 years old, suffering from leukemia with only a handful of days to live, and still capable of vigorously denouncing the myth of the mind—are best able to judge the success of Skinner's capacity to engineer a facilitative environment to deal with aging.

That someone is a product of his time and place is almost a cliche and, among behaviorists, a truism, but the observation rarely goes beyond that. Bjork has pointed out just exactly how and how much this is true of the preeminent behaviorist of this or any time. It is Bjork's position that regardless of the accuracy or persuasiveness of Skinner's analyses of individual and social behavior, he eventually confronted intellectual and cultural currents that will not easily shift from their channels. It is also Bjork's contention that these are the very currents that shaped Skinner. Skinner embodied a fair amount of what he attempted to change in society, and he knew it. He realized that there was a large gap between his own behavioral repertoire and what might have been possible as the result of the shaping of a well-planned behavioral system. As his alterego Frazier stated, "God damn it, Burris! Can't you see? *I'm-not-a-product-of-Walden-Two!*" (Skinner, 1948, p. 233).

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